Urban Guide to Weed Control

Health Canada Sante Canada

Pest Management Regulatory Agency

Saskatchewan Agriculture, Food and Rural Revitalization

Manitoba Agriculture and Food

Macdonald and Louise/Roblin Weed Districts of Manitoba

Weed Control for Your Yard

"One year's seeding means seven years weeding" contains a great deal of truth. That's because seed reproduction is the most common way in which weeds spread. The best way to control weeds is to simply prevent them from going to seed. Unfortunately, this prescription does not apply to all weeds. Some perennials reproduce from plant parts like rhizomes (reproductive roots), runners and tubers or other plant parts. Therefore, it's important to know what the weeds are, and whether they are annual, biennial, or perennial when planning a control program. It is also important not to introduce, or bring in, weeds by using weedy plants as ornamentals. Some examples of such plants with weedy natures include purple loosestrife, ox-eye daisy, scentless chamomile, creeping bellflower and toadflax.

This guide provides general measures that can be applied to the control of many urban weed problems. These measures can include both cultural (non-chemical) and chemical control. Weed control chemicals (herbicides) should be used judiciously, and according to the directions on the product label. The label indicates appropriate safety precautions that should be taken.

General Identification

Annual Weeds:

- Reproduce solely by seed; they germinate, flower, and die in one season.
- Prevention and control is easier, since they usually reproduce only by seed. Controlling the seeds helps eliminate future weed problems.
- Examples include pineapple weed, prostrate knotweed, purslane, lamb's-quarters and ragweed.

Biennial and Winter Annual Weeds:

- Reproduce by seed, they typically germinate in one year, flower in the next year and then die.
- Winter annuals typically germinate in late summer or fall. Some winter annual weeds will also grow as annual plants. Biennials use two full seasons to produce seeds.
- Control of these plants when they are in the seedling stage is important.
- Able to survive over the winter and other adverse conditions due to a thickened storage root.
- Some common winter annual weeds are flixweed, shepherd's-purse, and stinkweed (pennycress). Burdock is a common biennial weed.

Perennial Weeds:

- Regrow each year despite losing all above ground growth to frost. Most perennials reproduce both by seed and vegetative parts.
- Have tap roots (like a carrot) or underground tubers, bulbs or rhizomes. "Creeping" perennials can travel under or over soil, spreading very rapidly from the original plant.
- Roots that often contain large quantities of stored energy, which allows them to survive overwinter.
- Infrequent cultivation enhances the problem by spreading roots and other plant parts, which can grow and establish another weed patch.
- Examples include dandelion, plantain, purple loosestrife, Canada thistle, creeping Charlie and quackgrass.

General Guidelines for Non-Herbicide Control of Weeds

Lawns:

- A vigorous healthy lawn will help prevent weed establishment and growth.
- Keep lawns well watered and adequately fertilized. Water periodially for a sufficient length of time to provide for deep penetration, rather than watering each day for short periods of time which results in shallow penetration. Clay soils will require several short waterings (15 min) with short rest in between to prevent runoff into sewers.
- Mowing too low will reduce vigour and plant competition.
- Reseed any thin spots to ensure good grass cover.
- Remove weeds early, getting as much of the root as possible.
- Ensure any soil used is free of weed seeds and reproductive roots.
- Address any new weeds immediately – before they spread.

Note: Do not use grass clippings for mulching or composting from the first two cuttings after applying herbicide. Treated clippings may contain herbicide residue.

Gardens:

- Provide adequate water so plants can compete against weed growth.
- Fertilize with well-composted manure (which has fewer weed seeds) rather than fresh manure.
- Fully compost or otherwise dispose of any weed material.
- Mulches and ground covers can smother weeds and help to conserve soil moisture.
- Ensure any soil used is free of weed seeds and rhizomes.
- Eliminate perennial weeds from creeping into the edge of the garden.
- Remove annual weeds early – the best method of control is to eliminate weeds before seed is produced.

Guidelines for Using Herbicides to Control Weeds

Some weeds require herbicides to control them, but it's important to use chemicals (herbicides) carefully so that you don't damage other plants. Remember that:

- Herbicides do not distinguish between weeds and desirable plants and will kill any susceptible plants they contact.
- Non-selective herbicides (those containing the active ingredient glyphosate, for example) can kill any plants they touch.
- Selective herbicides kill certain weeds and leave other weeds and plants unharmed. They can damage desirable plants if used improperly.

Pesticide applications can impact soil and plants. The effectiveness of the application depends on environmental conditions. Always adhere to the following guidelines and read and follow label directions for herbicide use.

- Identify the weed to be controlled.
- Use only pesticides labelled "domestic" for home ground use.
- Follow labelled mixing directions.
- Observe the labelled time interval before harvesting garden produce.
- Always mix herbicides outdoors, and use safety equipment as stated on the product label.
- Do not spray herbicides on windy days or when there is no wind. Its best to spray under moderate conditions such as a gentle breeze, blowing away from sensitive vegetation.
- If plants are not actively growing because environmental conditions are poor (too cold, hot, wet or dry), resulting weed control may be unsatisfactory.
- Keep children and pets away from treated area for up to 24 hours.
- If you hire a professional for a herbicide application, make sure the person or company is qualified — and holds the proper licenses.
- If you spill a large amount of herbicide (or have any other herbicide accident that could affect the environment), call 1-204-945-4888 in Manitoba; 1-306-667-7525 in Saskatchewan.

Note: Use a separate sprayer to apply herbicides and other pesticides. Small amounts of herbicide in a sprayer can injure desirable plants!

Types of Do-It-Yourself Herbicide Applicators

Hand-Held Sprayer

This type of sprayer is the most common applicator used by homeowners, and is best for spot treatment of weeds. It consists of a container, an air pump, a hose, and a nozzle. Usually the herbicide is mixed with water. Some herbicides are sold in a pre-mixed, ready-to-use, hand-held spray bottle, which is disposed of when empty.

Backpack Sprayer

This type of sprayer is useful for a variety of applications. It consists of a 3 to 4 gallon tank, a pump mechanism, a spray wand, and a harness that permits the sprayer to be carried on your back. The tank of this sprayer is not under pressure. It is pumped with one hand, and the sprayer wand is held with the other. Pressure can be regulated by the amount of force used in pumping. Herbicides are generally mixed with water and applied in a diluted form.

Hose-End Sprayer

Generally, this type of sprayer results in the use of more herbicide than other types of applicators. It is better for applying fertilizers than herbicides.

Wipe-On Applicator

This allows the selective application of herbicides. A small amount of herbicide is wiped on a few leaves of the plant. The herbicide flows by gravity through small holes onto the applicators' absorptive surface (such as foam sponge or wick rope), and is then rubbed onto the weeds. An advantage is that drift is virtually eliminated. A disadvantage is that the plant must be in contact with the applicators' surface. Not all herbicides can be used in this type of applicator.

Play it Safe When Using Herbicides

Herbicides are designed to control unwanted plants and are generally very safe to the person using them and the environment. Herbicides are less toxic to people than other pesticides such as insecticides because plants are very different from people. However, herbicides, like any chemical, should be regarded as potentially hazardous to anyone coming into contact with them. Proper care should be taken to ensure your safety — and the safety of others — when applying herbicides. **Handle with care.**

Read the Label

All pesticides that are sold in Canada must be registered through Health Canada and under the Pest Control Products (PCP) Act. The label on the herbicide container has a great deal of important information that you should read thoroughly. Label information includes: identity (guarantee) of the active ingredient(s); directions for safe use; personal and protective

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equipment, first aid, caution and warning information; name and address of the manufacturer; product warnings and disposal. It is illegal to use a pesticide in a manner that is not specified on the label.

Handle with Care

Before handling (mixing, pouring, etc.) herbicides, refer to the label regarding adequate protective clothing and handling instructions. Always mix or pour herbicides outdoors.

Avoid Personal Contact

Some other important safety considerations include:

- Never eat, drink, or smoke while applying herbicides.
- Wash hands and other exposed body parts immediately after the application is completed.
- Remove your clothing after applying herbicides, shower, and put on clean clothes. Launder potentially contaminated clothing separately from the family wash.
- Immediately remove contaminated clothing and wash skin area with soap and water if an accidental splash or spill occurs.
- In most cases a treated area may be entered after the herbicide has dried. However, it is a good idea to stay off the treated area for up to 24 hours as a precaution.

Store Properly

Herbicides (and other pesticides) should always be stored in their original containers. When mixing for use, do not mix any more than needed for the job at hand. Label spray applicators used for herbicides and do not use them for other pesticides. Check containers periodically for leaking, and properly dispose of any that are damaged. The shed/garage in which they are stored should be located away from the house, and should be kept locked. Do not allow children or pets to access this building.

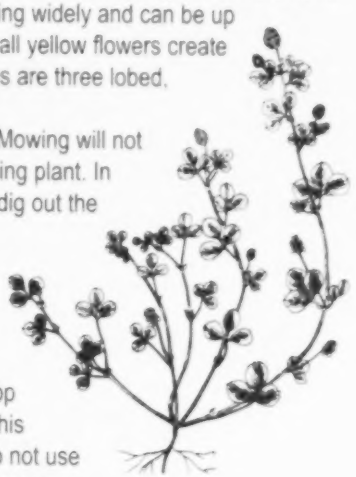
All empty herbicide containers should be triple rinsed, and safely stored until they can be disposed of according to locally approved regulations.

Know Emergency Procedures

If anyone accidentally ingests or is overly exposed to a herbicide, seek medical help immediately. Check the label for first-aid treatment. There is an emergency number on the label to call for information. Take the herbicide label with you to the hospital.

Weed Identification

Black Medic: An annual that reproduces by seeds. Stems lie flat to the ground, spreading widely and can be up to 2.5 feet long. Many small yellow flowers create a large seed head. Leaves are three lobed, similar to a cloverleaf.



Non-Chemical Control: Mowing will not help control this low-growing plant. In both lawns and gardens, dig out the whole plant. In lawns, maintaining healthy grass is important.

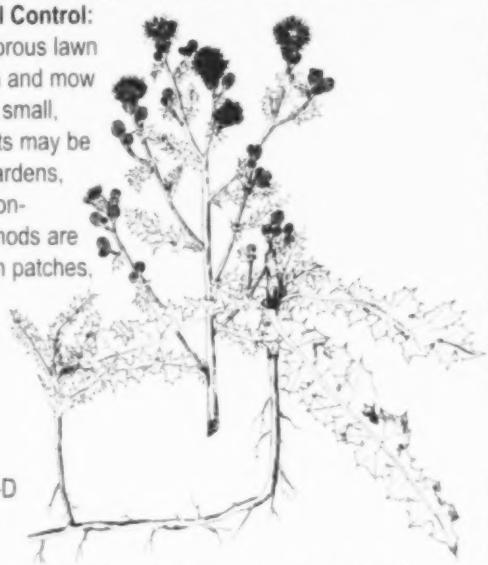
Chemical Control: Herbicide containing a mixture of 2,4-D, mecoprop and dicamba will control this weed before it flowers. Do not use these products in garden areas.

Burdock: A biennial that reproduces by seeds. Forms a cluster of leaves (rosette) the first year then matures in the second year and forms seed in a burr. It grows from 1-6.5 ft. tall. First year leaves resemble rhubarb and have a woolly texture on the underside. Second year plants stand straight up and stems can be red-coloured.

Non-Chemical Control: Dig the plant and root out of the ground during the first year. In the second year cut off the seed stalks to prevent seed formation.

Chemical Control: Herbicide containing 2,4-D and dicamba work to some degree during the first year (rosette). There is no adequate herbicide control during the second year. Do not use these products in garden areas.

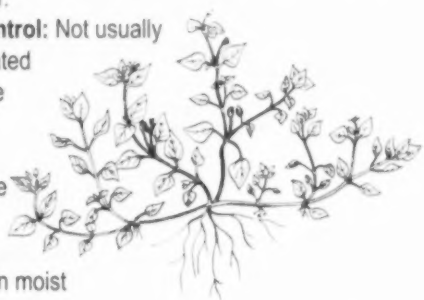
Canada Thistle: A perennial that reproduces by horizontal roots and seeds with white fluff. Usually 1-4 ft. tall, flowers are pink to purple and leaf edges are jagged, with short spines.



Non-Chemical Control: Maintain a vigorous lawn for competition and mow regularly. Very small, individual plants may be removed. In gardens, mechanical (non-chemical) methods are not effective on patches, because they promote more root growth.

Chemical Control: Herbicides containing 2,4-D and dicamba give some suppression, but repeated applications may be required in lawns. In gardens, non-selective products (glyphosate) can be used where desirable plants are not present. Late summer is the best time for control because root reserves are at their weakest at this time. After application, do not disturb weeds for at least a week to allow the herbicide to move into the roots. Trim flowers to prevent seed production.

Chickweed: An annual or occasionally a winter annual that reproduces by seeds and creeping stems. Tangled stems lie flat to the ground with many branches from 3-20 inches long. White flowers have 5 petals. Small heart shaped leaves are opposite each other.



Non-Chemical Control: Not usually a problem in cultivated garden areas, since regular tillage will control it. In other areas remove entire plant regularly because it can regrow. Does well in moist shaded areas.

Chemical Control: In lawns, herbicides containing 2,4-D & mecoprop can be useful when applied in late spring or early summer, before flowering. Do not use these products in garden areas.

Common Groundsel: An annual or biennial that reproduces by seeds. From 1-3 ft. tall, with yellow flowers appearing from late spring until late fall. Leaves alternate on the stem and are deeply divided into irregular lobes.

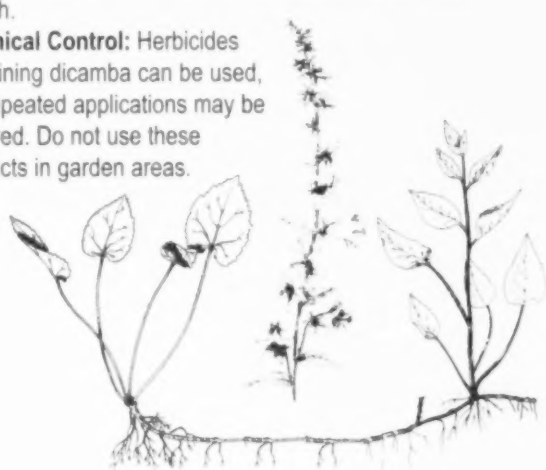
Non-Chemical Control: More of a problem in gardens than lawns. Remove by pulling, hoeing or tilling before seeds are produced.

Chemical Control: Products containing 2,4-D, mecoprop and dicamba can be used in lawns, if required, before flowering. Do not use these products in garden areas.

Creeping Bellflower: A perennial that reproduces by roots and seeds. Generally 1-2 ft. tall with bluish-purple, bell shaped flowers. Leaves can be confused with creeping Charlie when the plant is short, but become longer and more pointed as the plant gets taller. Individual stems are unbranched.

Non-Chemical Control: Dig out the entire plant as roots can regrow. In gardens, continuous cultivation helps reduce growth.

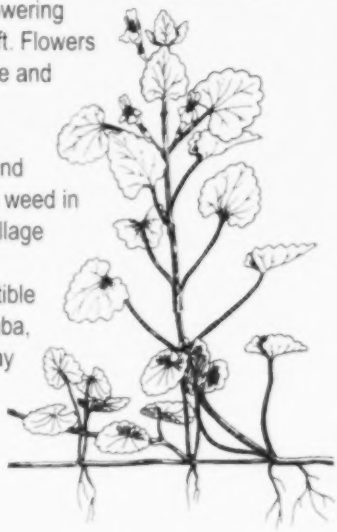
Chemical Control: Herbicides containing dicamba can be used, but repeated applications may be required. Do not use these products in garden areas.



Creeping Charlie: A perennial that reproduces by creeping stems and seeds. Stems are low to the ground, forming a dense ground cover, with flowering branches and spread 1-2.5 ft. Flowers are light blue to bluish-purple and leaf edges have shallow rounded teeth.

Non-Chemical Control: Hand pulling rarely eliminates this weed in lawns. In gardens, regular tillage will reduce growth.

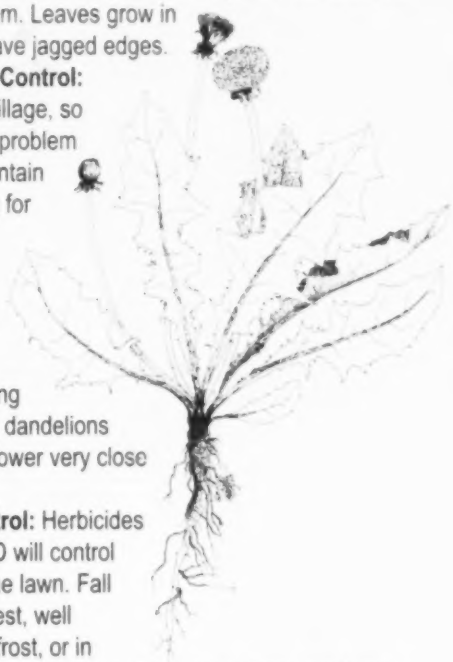
Chemical Control: Susceptible to products containing dicamba, but repeated applications may be necessary. Do not use these products in garden areas.



Dandelion: A perennial that reproduces by seeds carried on white fluff. It is short to the ground with yellow flowers on a hollow milky stem. Leaves grow in a cluster and have jagged edges.

Non-Chemical Control: Susceptible to tillage, so is not usually a problem in gardens. Maintain a vigorous lawn for competition. Young plants can be dug out but all the root must be removed. Mowing will not help, as dandelions can grow and flower very close to the ground.

Chemical Control: Herbicides containing 2,4-D will control dandelions in the lawn. Fall application is best, well before a killing frost, or in early spring before flowering. Do not use these products in garden areas. Herbicides containing ghyphosate work well in gardens, but may require repeat applications.



Foxtail Barley: A native perennial grass that reproduces by seed. Narrow leaves grow in a clump. Seeds have long fine brush-like hairs which make the seedhead look like a "tail."

Non-Chemical Controls: Can be removed by regular tillage. This plant can also be dug out effectively.

Chemical Controls: Non-selective herbicides (glyphosate) can be used where there are no other plants nearby.

Lamb's-quarters: An annual that reproduces by seeds. Generally 2-4 ft. tall with a small and inconspicuous green flower that has no petals. Leaves are often covered with a mealy powder, especially on the undersides, and leaf edges are wavy.

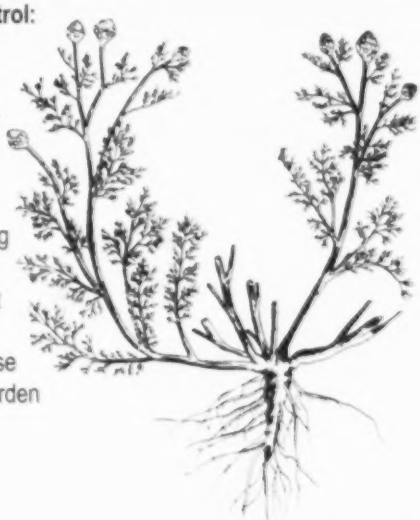
Non-Chemical Control: Emerges throughout the growing season, but is easily controlled by hoeing, tillage or mowing on a regular basis.

Chemical Control: Herbicides containing 2,4-D will work effectively. Do not use these products in garden areas. Non-selective herbicides work well in gardens.

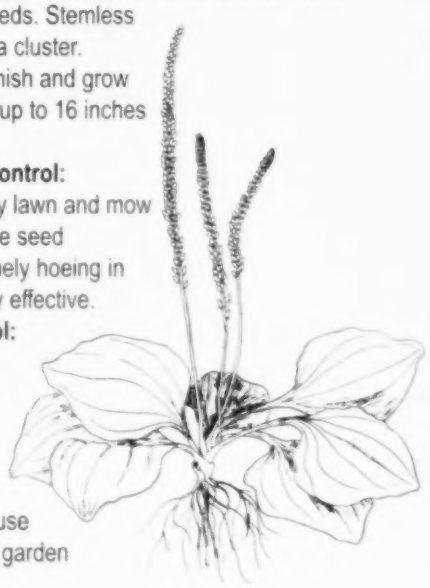
Pineapple Weed: An annual weed that reproduces by seeds. Short, 0.3-1.3 ft. tall, with yellow-green flowers in a cone-shaped head. Feathery leaves alternate on branching stems and can have a distinct pineapple scent. Usually a problem along the edge of driveways.

Non-Chemical Control: Easily controlled by removal before seeds are produced. In gardens, hoeing or tillage works well.

Chemical Control: Herbicides containing 2,4-D or MCPA can control this weed but are not normally necessary. Do not use these products in garden areas.



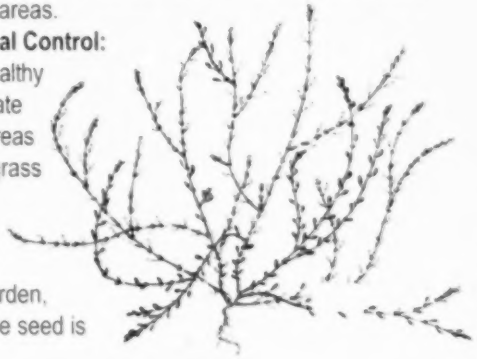
Plantain (Broadleaf Plantain): A short perennial that reproduces by seeds. Stemless oval leaves form a cluster. Flowers are greenish and grow on a single spike up to 16 inches tall.



Non-Chemical Control: Maintain a healthy lawn and mow regularly to reduce seed development. Timely hoeing in the garden is very effective.

Chemical Control: Herbicides containing 2,4-D may help. This weed is not susceptible to dicamba. Do not use these products in garden areas.

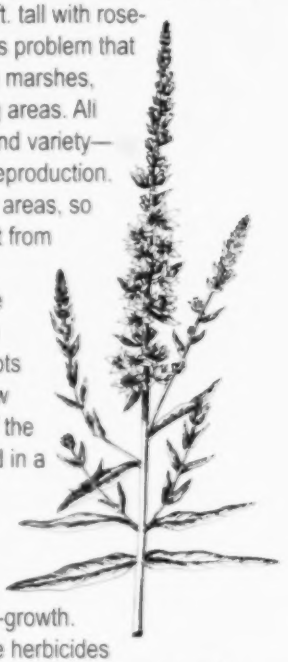
Prostrate Knotweed: An annual that reproduces by seeds. Usually short and flat to the ground, but can be slightly raised or erect. Many oval leaves alternate on the stem. Grows in hard-packed areas.



Non-Chemical Control: Maintain a healthy lawn and aerate compacted areas to stimulate grass growth. Hoeing or tillage works well in the garden, remove before seed is produced.

Chemical Control: Herbicide mixtures containing 2,4-D, dicamba and mecoprop are best used when in the seedling stage. Do not use these products in garden areas.

Purple Loosestrife (Lythrum): A perennial that reproduces by seeds and rhizomes. It is 1-8 ft. tall with rose-purple spikes of flowers. A serious problem that can overtake native vegetation in marshes, ditches, and other wildlife nesting areas. All plants—regardless of locations and variety—should be destroyed to prevent reproduction. This weed is highly prolific in wet areas, so care should be taken to prevent it from going to seed.



Non-Chemical Control: Remove the whole plant, using a spade to ensure getting as much of the roots as possible. This plant can regrow from the stem or small amount of the root. Plant parts should be sealed in a plastic bag. For disposal, call your local weed control authority (city, town or municipality). Do not compost. Watch the spot for several years and remove any re-growth.

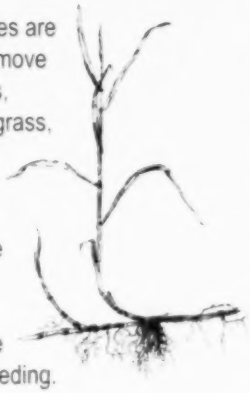
Chemical Control: Non-selective herbicides (glyphosate) can be used, but only on dry areas where there are no desirable plants. Complete plant removal is still the most effective method.

Purslane (Portulaca): An annual that reproduces by seeds and plant fragments. Stems grow flat to the ground, up to 2 ft. long. It has yellow flowers and leaves are small and fleshy.

Non-Chemical Control: Remove all plant parts since cut pieces or leaves can root, grow and produce seed.

Chemical Control: Herbicides containing 2,4-D or MCPA may control this weed in the seedling stage only. Do not use these products in garden areas.

Quackgrass: A perennial grass that reproduces by seeds or rhizomes that form patches. Up to 3.5 ft. tall, with flat hairless leaves.



Non-Chemical Control: Root rhizomes are very prolific, care must be taken to remove all root material from the soil. In lawns, frequent mowing will suppress quackgrass, but will not eliminate it.

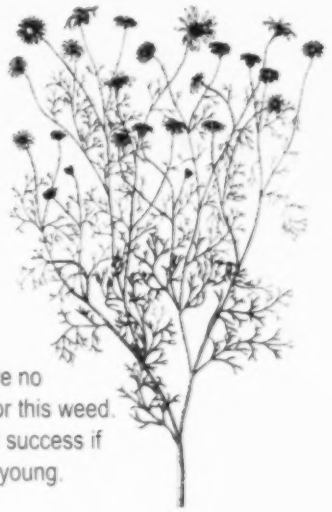
Chemical Control: Non-selective herbicides (glyphosate) are effective. If the infestation is severe, a complete lawn renovation may be required. In gardens, spot spray the patches with glyphosate that are not near desirable plants. These areas may require reseeding.

Round-Leaved Mallow: An annual or biennial that reproduces by seeds. Stems grow along the ground up to 1.5 ft. long, branching at the base. Flowers are usually white with dark violet veins, and the seedpod resembles a wheel of cheese. Leaves alternate on the stem and are heart shaped with scalloped edges. Seeds have been reorded to last up to 100 years in the soil. Prevent seed production.

Non-Chemical Control: Hoeing or tillage is the most effective during the seedling stage. Once the weed becomes established, it is difficult to remove because of its deep taproot. Mowing in lawns is not effective because of the weed's low growth.

Chemical Control: Can be controlled in lawns with herbicides containing 2,4-D, dicamba and mecoprop. Do not use these products in garden areas.

Scentless Chamomile: Usually a perennial that reproduces by seed. Can also act as an annual or biennial, growing, producing seed and dying in 1 or 2 seasons. Many daisy-like white flowers. Leaves are feathery.



Non-Chemical Control: Pulling, hoeing and tilling work well in the garden, remove before seed is produced. Mowing will not entirely control this weed but may help reduce the amount of seed produced.

Chemical Control: There are no effective chemical controls for this weed. Glyphosate can have limited success if applied when the plants are young.

Shepherd's Purse: An annual or winter annual, reproducing by seeds. Usually germinates in the fall, young plants are dormant over the winter, and then mature and produce seed early the following spring. Flowers are white and the seedpod is a distinctive heart shape. Leaves alternate on the stem and are lobed, edges can be toothed to smooth.

Non-Chemical Control: Remove before seed is produced. Fall removal will destroy seedlings and prevent early ripening the following spring and summer.

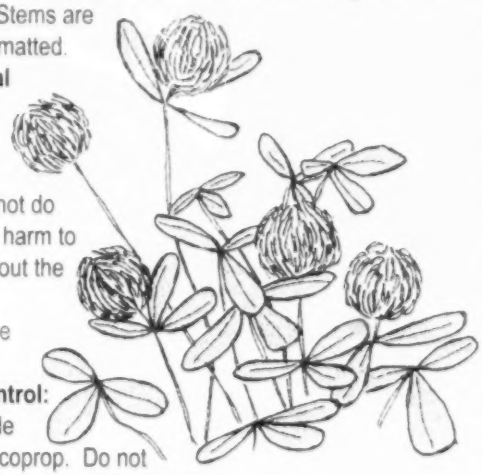
Chemical Control: Herbicides containing 2,4-D or MCPA are effective when weeds are in the seedling stage, in late fall or early spring on small plants. Do not use these products in garden areas.

Stinkweed: An annual or winter annual reproducing by seed. Leaves have a distinct odor (hence the name). Flowers are small and white, with leaves first appearing in a cluster (rosette) then later the stem stretches up. Plant height is variable.

Non-Chemical Control: Remove before seed is produced. This weed germinates all season long, so control may have to be repeated.

Chemical Control: Herbicides containing 2,4-D or MCPA are effective when weeds are in the seedling stage, in late fall or early spring on small plants. Do not use these products in garden areas. Non-selective herbicides are effective in gardens, away from desirable plants.

White Dutch Clover: A perennial that reproduces by above ground stems and seeds. Short, 2-6 inches tall with clusters of small white flowers. Three leaflets with serrated edges make up each leaf. Stems are creeping and matted.



Non-Chemical Control: Mowing will reduce plant mass but will not do any long-term harm to the plant. Dig out the entire plant if infestations are minor.

Chemical Control: Use a herbicide containing mecoprop. Do not use these products in garden areas.

Controlling Other Vegetation Problems

Mosses

In lawns, low fertility, poor drainage and lack of sunshine hamper grass growth and encourage moss growth. For control: rake early to remove moss; aerate soil, and fertilize; improve drainage; reduce shade where possible by pruning trees and shrubs.

Unwanted Trees

Unwanted trees should be manually removed after they have fully leafed out. Their leaves cannot be sprayed with a herbicide for fear of drifting on desirable vegetation.

After removal as close to the ground as possible, the root must be killed to prevent suckering. Do this by drilling holes 1 cm deep in the wood near the bark of the stump, filling it with 2,4-D, and then covering with clay. The herbicide will move into root system and kill the suckers as they develop.

Once the stump is killed, it can be left to the elements; natural decay-causing organisms will gradually break it down.

Mushrooms

Mushrooms are actually a fungus — and not a weed; therefore, they are not controlled by herbicides. The presence of mushrooms is often an indicator of wet soil conditions. In lawns, aerating will help. Mushrooms feed off old decaying wood (e.g., stumps and roots from dead and dying trees).

Noxious Weeds

Both Manitoba and Saskatchewan have legislation that mandates owners and occupants to prevent the growth, ripening and spread of weeds and weed seeds. The legislation is called the Noxious Weeds Act. Noxious weeds are considered to be a threat to agriculture, human health, or the environment due to their invasive nature or toxic properties. Further information on this legislation can be found through municipal or provincial agricultural staff or from Manitoba or Saskatchewan's web sites. Manitoba's Noxious Weed Act can be found at: **www.gov.mb.ca/chc/statpub/free/pdf/n110.pdf** and in Saskatchewan at: **www.qp.gov.sk.ca** and search Free Law for "Noxious."

For more information on home gardens, contact:

University of Manitoba Horticulture Line 1-800-432-1960
University of Saskatchewan Garden Line 306-966-5865

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Written and reviewed by:
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